

Rejection under 35 USC 112

Claims 1-6, 8, 14, 17 and 18 were rejected under 35 USC 112. Claims 1-8 have been cancelled. Claims 14, 17 and 18 have been amended to overcome the antecedent basis issues. Withdrawal of the 112 rejection is respectfully requested.

Rejection under 35 USC 103

Claims 1 and 8 were rejected under 35 USC 102b as being unpatentable over Long, US patent 3,120,962.

Long discloses a clearance height control system. The valve 60 is mounted to a vehicle chassis and is turned on and off by arms 81 and 82 attached to the axle. The valve adjusts the pressure in air springs 20. The pressure is supplied by compressor 110. The device of long is not adjustable by the vehicle operator. The compressor of long can be turned on or off by using the switch 109. However, this switch has no effect on the amount of air in the air springs. The only factor that controls the amount of air pressure in air springs 20 is the length of arm 82. This is a device of the prior art. In order for the vehicle operator to make an adjustment to the ride firmness in Long, the length of arm 82 has to be changed. This is the exact problem that the present invention solves. It eliminates having to crawl under the vehicle and change arm 82.

Long does not teach, disclose or suggest as in new claim 19, an assembly for allowing a vehicle operator to admit or release air to an air bag mounted in a vehicle. The assembly has an actuator attached to the frame. An air valve is communicated with the air bag. The actuator is connected to the air valve. A control switch is connected to the actuator to allow the vehicle operator to control the actuator. The

actuator is operable to admit or release air from the air bag so as to adjust the ride firmness of the vehicle. A rod is connected to the air valve and extends from the air valve to the axle. The rod is adapted to move the air valve to admit or release air from the air bag in response to the vehicle load changing.

The operator of the vehicle can therefore raise or lower the vehicle and adjust the firmness of the ride using the control switch to control the actuator.

In contrast, the cited Long reference does not allow a vehicle operator to control the amount of air in the air spring. The amount of air in the air spring of Long is pre-determined by the length of lever 82. See column 5, lines 35-75 of long. The operator of the device of Long can either allow the leveling of the vehicle using arm 82 or can turn off the system using switch 109.

Specifically, the present invention has a control switch that is connected to the actuator. The control switch allows the operator of the vehicle to add or release air from the air bag by moving the actuator that is connected to the valve. Once the actuator is in position the ride is maintained at the same firmness or position by rod 190. In other words, the operator of the present invention sets the ride firmness using the control switch and rod 190 along with valve 160 maintain the ride firmness as the load changes.

Dependent claims 20-24 depend from independent claim 19 and are allowable therewith.

Withdrawal of the 102 rejection is respectfully requested.

Allowable Subject Matter

Applicants gratefully acknowledge the allowance of claims 2-6, 9-15 and 17-18.

Conclusion:

The Examiner's attention to the patent application is appreciated. Claims 9-15 and 17-24 are now believed to be in condition for allowance. A section entitled "Version with markings to show changes made", is attached indicating the changes made in the amendment.

Respectfully submitted,



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Version With Markings to Show changes Mad

In the specification:

The paragraph beginning at the bottom of page 4 has been amended as follows:

Referring to figures 1-6, there is an actuator assembly 100 shown mounted to a chassis or frame 20 of a vehicle 10. An axle 12 extends perpendicular to vehicle frame 20 and is positioned below the frame 14 20. Axle 12 has a differential 14 and tires 16 mounted at each end as is well known in the art. The frame has several cross-members that extend between portions of the frame 20. The cross-members could be bolted or welded to frame 20. An air spring or air bag 30 includes an upper bag frame 32, which is attached to frame 20 by bolts 34. Similarly, a lower bag frame 36 is connected to the air bag 32 and axle 12. Bag frames 32 and 36 retain the air bag and attach the air bag between the frame and the axle. The air bag 32 is a flexible rubber bag whose inflation can be adjusted by adding air pressure or releasing air pressure. An air inlet 38 is connected to the air bag to admit or release air. Air inlet 38 is connected to an air bag air hose 40.

The middle paragraph of page 8 has been amended as follows:

As arm 122 moves, position plate 140 moves and projection 141 engages one of switches 150, 151 154 or 152. The switches turn on one of lights 145, 146 and 147 indicating to the operator the ride position or quality.

In the claims:

Claims 1-8 have been deleted.

The following claims have been amended:

12. (amended) The actuator assembly according to claim 11, further comprising:

(a) a second indicator switch mounted to the rail, the position plate operable to engage the second switch as the actuator arm is moved, the second switch generating an electrical signal representative of the-a soft ride firmness.

13. (amended) The actuator assembly according to claim 12, further comprising:

(a) a third indicator switch mounted to the rail, the position plate operable to engage the third switch as the actuator arm is moved, the third switch generating an electrical signal representative of the-a-hard ride firmness.

14. (twice amended) The actuator assembly according to claim 10 wherein a second ball bearing is located within the channel spaced apart from the first ball bearing, the second ball bearing having a second stud attached to the actuator arm.

17. (twice amended) An actuator assembly for moving an air valve between a first position in which air is admitted to an air bag mounted in a vehicle and a second position in which air is released from the air bag, the air valve pneumatically communicating with the air bag, the air valve having a rod in contact with an axle of the vehicle, the assembly comprising:

- a) a rail attached to a cross member of the vehicle;
- b) an actuator attached to the rail, the actuator having a movable shaft;
- c) an actuator arm attached to the rail and having a first end attached to the actuator, the actuator operable to linearly move the arm;
- d) a ball bearing movably retained within the channel rail, the ball bearing having a stud extending from the ball bearing through the actuator arm and attached to the actuator shaft; and
- e) a mounting plate having an end attached to the air valve and another end attached to a second end of the actuator arm, the actuator operable to move the air valve between the first and second positions so as to adjust the ride firmness of the vehicle.

The following new claims have been added.

19. An assembly for allowing a vehicle operator to admit or release air to an air bag mounted in a vehicle, the vehicle having a frame and an axle, the assembly comprising:

- a) an actuator attached to the frame;
- b) an air valve pneumatically communicated with the air bag, the actuator connected to the air valve;
- c) a control switch connected to the actuator to allow the vehicle operator to control the actuator, the actuator operable to admit or release air from the air bag so as to adjust the ride firmness of the vehicle; and
- d) a rod connected to the air valve and extending from the air valve to the axle, the rod adapted to move the air valve to admit or release air from the air bag in response to the vehicle load changing.

20. The assembly according to claim 19, wherein the control switch and the actuator operate independently of the rod to open or close the air valve.

21. The assembly according to claim 19, wherein an indicating device is mounted with the assembly to detect position.

22. The assembly according to claim 21, wherein the indicating device is an indicator switch mounted to the actuator.

23. The assembly according to claim 22, wherein the indicator switch is connected with
a light that is viewable by the vehicle operator.

24. The assembly according to claim 19, wherein the air valve can be opened or closed
by the operator while the vehicle is in motion.